

RECENT MOUND EXPLORATION IN OHIO.

BY GERARD FOWKE AND W. K. MOOREHEAD.

During the past summer (1894) a number of mounds have been explored in Ohio in behalf of the Academy of Natural Sciences of Philadelphia. The reports of Mr. Gerard Fowke relating to the Van Meter mound and of Mr. Warren K. Moorehead as to the Metzger mound are appended. CLARENCE B. MOORE.

“MOUNDS IN PIKE COUNTY, OHIO.—Three miles south of Piketon, half a mile from the point where Beaver Creek discharges into the Scioto river, on the farm of J. M. Van Meter,¹ is a ‘double mound’ on the highest terrace. The larger part, measuring, after being plowed over for a number of years, 75 feet in diameter and 10 feet high, has its west base just at the brink of the terrace at a point where the bluff is 50 feet high, quite steep, with the creek at its foot. The smaller, south of east from the first, is six and one-half feet above the surrounding level and 56 feet in diameter. At the junction of the two, the top is three and one-half feet above the general level.

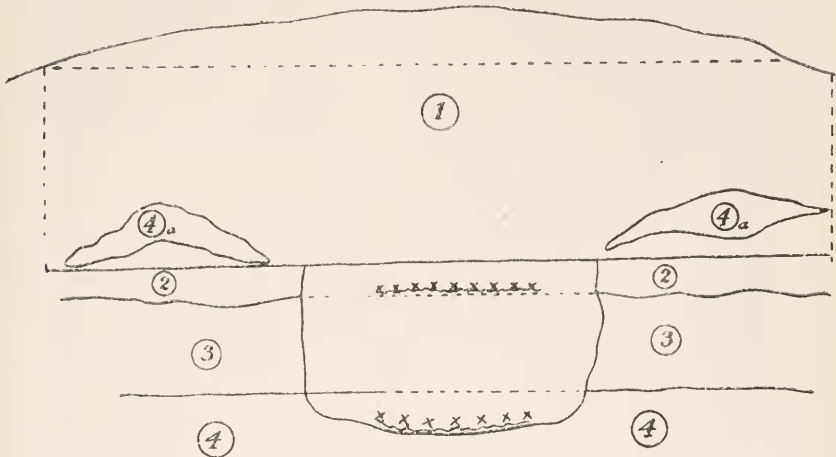
“A trench 10 feet wide was started in the east side of the smaller mound, gradually widening until it was 25 feet at the center, and then drawing in until it was 20 feet wide at 15 feet west of the center. Beneath the middle part was a core 20 feet across and 3 feet high of soil placed and packed, or much tramped, while wet; it was somewhat darker than the loam composing the remainder of the mound, quite hard, and broke off in cleds.

“On the original surface of the ground, beginning about five feet east of the center, was a burned place a little over 20 feet across at the widest part, and reaching 20 feet west of the center, or nearly to the lowest point between the mounds. A fire had been burned over this area for a short time only and with a small amount of wood, as the burned earth was nowhere more than an inch thick, most of it much less, while the charcoal and ashes varied from a mere streak

¹ See Catalogue of Prehistoric Works East of the Rocky Mountains, by Cyrus Thomas, page 182. C. B. M.

to a little more than an inch except in one place where a short log six inches in diameter was converted into charcoal.

“Except an arrow and a spear, found loose in the dirt, there was not a relic of any description, nor the smallest fragment of a human bone. A few pieces of much burned bones of small animals or large birds were in the charcoal at the center, and many small pieces of burned stone were scattered all through the mound. The eastern



Section of deep grave, 20 feet south from center of larger mound on Van Meter farm.

1. Body of mound, 6 feet.
 2. Soil, 1 foot.
 3. Subsoil, 3 feet.
 4. Gravel, (to bed of river).
 - 4a. Gravel thrown from excavation.
 - XXXXX. Position of human bones.
- Scale. .18 of an inch equals 1 foot.

half contained a large amount of ashes and much charcoal, thrown in with the dirt to help fill up.

“In the larger mound a circle forty feet in diameter was laid off with the apex as the center. This brought the circumference about four feet below the top.

“In the cap, 12 feet east of center were decayed human bones with a few rough beads and fragments of pottery; at the same distance southwest of center were others with a spear or knife by one femur and a flint chisel, polished at the sharp end, near the skull. None of the bones were entire, and being so close to the surface were

as soft as ashes. Six feet southeast of center a flint knife lay near fragments of a skull; and at the place where the chest bones would have been were fragments of a pot that seemed to have been entire when deposited. Less than a foot from the apex were fragmentary human bones.

•• A knife and a boat-shaped slate ornament with a crease around the middle were loose in the dirt. Nothing further was found in the upper portion. A well wrought flint spear, $8\frac{1}{2}$ inches long, and a hematite hemisphere were found on the top of this mound some years ago—perhaps plowed out. All the loose earth was now scraped away and concentric circles, five feet apart, laid off on the level surface of the top. In the outer ring, on the northern and western sides, within a foot or less of the top were traces of six skeletons, intrusive burials; nothing was found with any of them.

•• A little west of south from center, with its inner margin 17 feet from that point, was an elliptical grave, dug before the mound was begun. It measured a little more than nine feet long and a little more than five feet wide, with the longer axis very nearly east and west. At about 18 inches below the original surface, along the center line of the grave, a body had been placed. Only fragments of the teeth and skull remained, except that a few small pieces of the pelvis and finger bones were preserved by the action of five small rectangular copper plates² that had evidently been fastened around the wrist. These plates were in a little mass of very loose, dark earth, probably remains of some sort of fur or fabric, stained in a few places with red ochre. Nothing else was found in the grave until at the bottom, more than a foot below the upper level of the gray sand, which here lies four feet under the proper surface. At this level lay a few decayed pieces of bones of a medium sized person extended on the back, head east, exactly under the upper skeleton. The body had been covered with bark or wood which extended to the margin of the grave on every side and gave a reddish-brown tinge to the lower two inches of filled-in earth. This earth was from a swamp or low bottom, being black and sticky and evidently packed in wet, causing the entire decay of the skeleton which would otherwise have been well preserved by the dry sand in which it lay. The grave wall was cut down straight for

² See note. C. E. M.

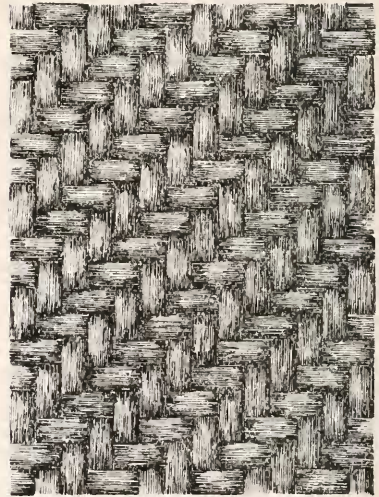
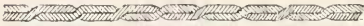
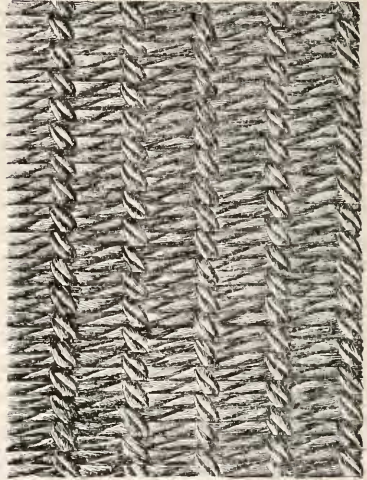
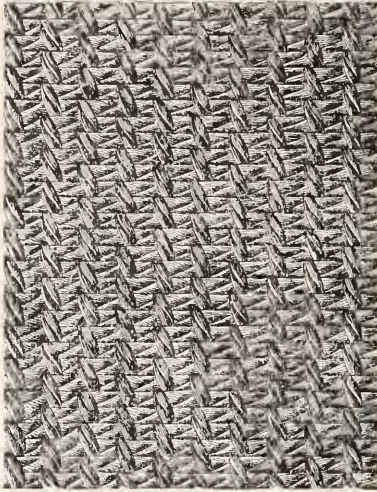
two feet; below this the ends drew in somewhat, while the sides were slightly overhanging, probably from caving in of the gravel while it was being dug. The work was done from the south side, as most of the earth was thrown to that side, the remainder being piled at the two ends.

“At 15 feet north of the center began a streak of burned earth, charcoal, and ashes, which gradually thickened toward the center. It proved to be nearly circular in outline and 20 feet across. For three or four feet around the margin the ashes seem to have been swept toward the center, as the natural earth of the mound had been deposited directly on that burned, without any ashes or charcoal intervening. At eight feet north of center the mass thickened to a foot and held this thickness for six feet farther, and for nearly eight feet east and west. The material forming the charcoal varied from sedge grass to small trees, the largest piece being a pine log a foot in diameter and six feet long. The inner portion of this was in its natural condition, the charred outside having preserved the part to which the fire had not reached. Much of the charcoal was from wood burned while green and was bright as polished metal where it had been kept tolerably dry. There were a few fragments of animal bone here and there, and enough small pieces of human bone to show that a body or skeleton had been cremated, some of them being like cinder, others scarcely charred. The thinness of the ashes and the amount of the charcoal showed that the fire had been smothered while much of the fuel remained on it. Lying on the top of the charcoal where it was thickest was a considerable quantity of charred cloth, showing at least four distinct methods of weaving; there was also much of what seemed to be fur or some such material; the latter was soft as soot, while some of the cloth was fairly well preserved, a very little of it showing scarcely any mark of burning.

“Except as noted above, no relics of any description were found anywhere in the lower part of the mound.

GERARD FOWKE.”

The five rectangular sheets of copper found with human remains by Mr. Gerard Fowke, beneath the base of the larger Van Meter mound, near Piketon, Pike Co., Ohio, consisted of sheet copper oxidized and carbonated to a certain extent, though a large percentage of metal was unaffected. These sheets, though not exactly similar as to



Vegetable fabric, with sections. Larger Van Meter Mound. (Double size.)

length and breadth, do not vary materially, so that the measurement of one, namely 2·5 inches by 3·2 inches, may be considered to apply approximately to all. That they had been portions of a sheet or sheets of larger size was evidenced by at least one closely ground edge on each specimen, contrasting markedly with the rough line of separation of the other margins. No ornamentation like the beaded margin and the *repoussé* work of Florida and Tennessee was apparent, though the marks of numerous blows from a convex blunt cutting-edge were visible on all the specimens. Exfoliation was noticeable near the edges. The sheets were of irregular thickness averaging about 1 mm.

Notwithstanding these indices of aboriginal origin, so solid was the appearance of the copper that, though no believer in a post-Columbian origin for mounds as a rule, I admit having experienced a feeling of doubt as to the origin of this copper, a doubt which a thorough and careful analysis, made by Ledoux and Company, of New York, speedily dispelled. The result is given in detail:—

“Copper	99·9130
Silver	0·0198
Arsenic	0·0026
Antimony.	Trace
Iron	0·0233
Nickel and cobalt	0·0080

“NOTE:—The above analysis was made after removing the superimposed film of oxides and carbonate from the sample. Special examination for lead, bismuth, and zinc shows that none of these is present.”

It is quite evident that here we have to do with native copper of a purity greater than is ordinarily produced at the present time by any smelting process³ and consequently of a still higher degree of purity than would be the product of early processes of smelting the arsenical sulphide ores of Europe⁴. Moreover, the introduction of lead in refining, though not an invariable custom, was extensively practised in Europe, especially in copper intended for sheet or wire, and its

³ All smelted copper contains from three to ten hundredths of one per cent. of combined oxygen.

⁴ For full details as to aboriginal copper the reader is referred to “Certain Sand Mounds of the St. John’s River, Florida, Part II,” Journ. Acad. Nat. Sci., Vol. X.

absence, in connection with freedom from considerable quantities of arsenic, or antimony, or both, may always be regarded as good evidence against an early European origin.

CLARENCE B. MOORE.

“THE METZGER MOUND.—This structure, the property of Mr. Charles Metzger, is located on Deer Creek, about two miles from Yellow Bud (southwest). Situated upon a hill one hundred and fifty or one hundred and sixty feet in altitude, the mound commands a fine view of the surrounding country. The plains stretch away towards the Scioto three miles distant and continue two miles east of the river, where they terminate in high hills. The mound is very nearly round, and is thirty-four feet in height by two hundred feet in diameter at the base. Alongside of it is a horse-shoe or crescent-shaped embankment and two small mounds.

“On August 20, 1894, work was begun upon the structure. The mound had been originally opened by some farmers. When they began work the structure stood forty feet in height. They sank a circular shaft eight feet in diameter from the apex downwards.

“Our men first reduced the height of the mound about ten feet. This gave a platform fifty feet in diameter and twenty-four feet above the surrounding surface. The ground in the center of the structure (where the previous excavation had been sunk), we found to be very damp and heavy, and as we proceeded downward, we became convinced that the log pen found by the original excavators in the center of the structure would be in a bad condition, and that we must depend on other pens were we to take out any logs entire.

“The structure was composed of ordinary hill clay. At the top it was not stratified, and as it varied but slightly in color, it was extremely difficult to distinguish any of the ‘dumps.’⁵ On August 22nd a very fragmentary skeleton was found about twelve feet below the top and four feet southwest of the central excavation. The body had been originally buried in bark which percolation of water from above had utterly decomposed. With the bones was a spool-shaped button of copper, about an inch in diameter, heavily coated with copper oxide.

“The 25th two teams were put upon the mound, and they, together with the shovels, reduced it rapidly. When within four feet of the

⁵ A “dump” represents the load deposited by one man.—C. B. M.

top of the log pens we dispensed with the teams and used the shovellers for the remainder of the work. One or two arrow-heads were found during the course of the excavations.

“At eighteen feet from the top and eight feet north of the center was a fairly well preserved skeleton surrounded by pieces of sapplings and logs, two to four feet in length. These were originally laid, one above the other, to the height of about a foot. These logs, being of small size, when decayed, had broken beneath the weight of earth. The bones of the skeleton were unusually yellow. No relics were found with the remains. We saved some samples of the wood, which experienced timber men pronounced oak and walnut.

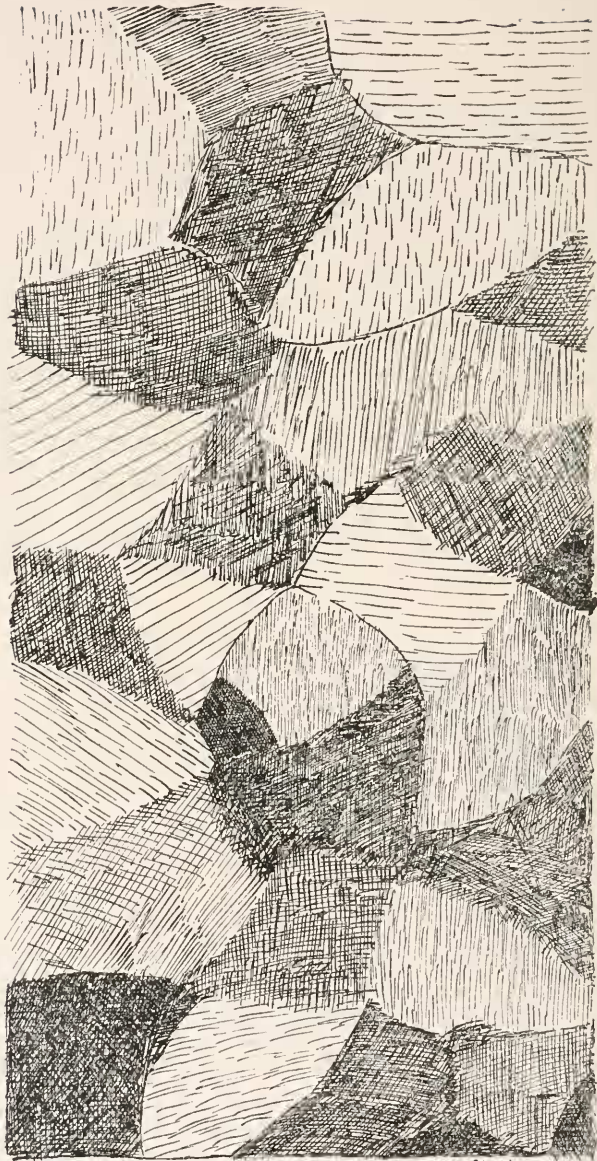
“On the 27th and 28th numerous bunches of fine roots and underground moss were encountered. Samples of the moss were preserved. There were also several deposits of boulders, made without apparent reason. The mound, at this point (twenty-three feet from the top, nine feet from the bottom), appeared to be stratified, and the earth was very soft in places.

“The log pen in the center of the mound, and the one northwest of it, remained for many years before they caved in. That is, the



Metzger Mound, diagram showing banded structure of portion of east wall of trench when partially excavated.

wood did not decay for a long period of time. In the case of the first or largest pen (central one) the earth was kept out of a space 12 x 15 x 4 feet. The second pen occupied a space about 8 x 10 and about 6 feet high, and was constructed differently from the first, being very small at the top. These pens existed long enough for the earth above them to be packed into large clods, which did not fall into the cavity when the wood decayed but gradually settled, forming an arch. The second arch was about 8 feet in diameter at the bottom and 7 feet high. The cavity was filled with underground moss. There was no evidence that moisture had ever entered the



B. Metzger Mound.—Diagram of horizontal section showing size and shape of basket dumps. Size of section 3 x 6 feet. Colors of the earth found within limits of this diagram were black, light and dark brown, yellow and bluish gray.

little cave. It was perfectly dry with fine dust in the bottom. The moss would blaze when touched with a match. In the central pen the conditions were entirely different. The excavation sunk by the farmers permitted water to penetrate entirely over 15 x 20 feet of the base of the mound.

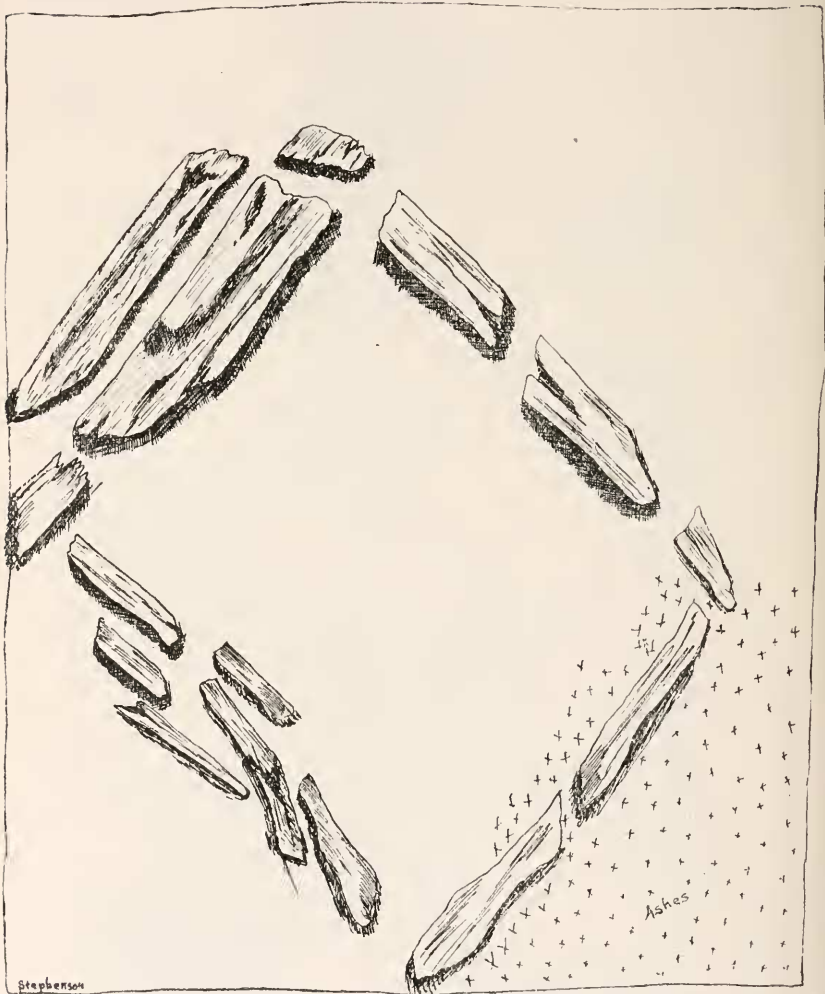
“As the main trench was continued we noticed several small ash pits and patches of dark and also burnt earth. In these were ashes, pottery fragments, animal bones, mussel shells and flint chips. This village site refuse was not considerable.

“Below the upper portion different colors in the mound showed plainly the ‘dumps’ which contained from a peck to a third of a bushel each. They clearly showed the mound to have been constructed entirely by manual labor, and that about as much earth as could be conveniently carried by one person was deposited in each load. The drawing *B* shows the section, three by six feet, which has been carefully ‘scalped’ and smoothed to bring out the shades.

“The trench at this point was about forty-five or fifty feet in width and was level throughout. The last three or four feet taken out by the teams were removed from the center, and when the shovellers began, the trench dipped from either end to the center. In working to the original base line a large bed of ashes was uncovered. The log pen itself extended 12 feet east and west to 15 feet north and south. The statement of the original excavators we can hardly verify. It appears that the pen was composed of smaller logs than they state. Two large logs have left a broad, thick strip of decayed wood on the narrowest side of the pen. One corner of the pen ran over into the ash pit. The logs at the southeast corner seem to have been somewhat larger than the others, and were badly decayed, but we managed to dig around them and bring them into relief. Drawing *C* shows the pen as far as we were able to trace it.

“There were here and there fragments of red pottery. About one foot below the remains of the logs were original yellow clay and shale clay the natural hill soil. The decayed logs and the reddish earth resulting from their decay would fill four or five barrels. This will give an idea of the bulk which they originally represented. It was our opinion from the excavation that most of the logs were saplings, and that the pen was not as large as claimed by the original explorers. While as large north and east it certainly was not more than four feet high.

“The sides of the trench were undermined as much as was consistent with safety. It was found that there was nothing in the first



C. Metzger Mound.—Diagram of surface of excavation showing pen two feet above base of mound.

or main trench save the pen described, the refuse, the two fragmentary skeletons, the copper ear button and a few arrow-heads.

The trench was cleaned to the original surface and experimental holes were sunk even to the shale. There were no burials below the original surface.

“The ground had been levelled and burnt, thus giving the mound an even floor or base. In nearly all mounds of the lower Scioto this peculiarity of construction is observed. It is, therefore, very easy to keep upon the base line.

“A bed of ashes was discovered about four feet from the bottom on the northwest side of the trench. In it were bits of charcoal of exceedingly bright lustre and as hard as bituminous coal. The ash bed was everywhere covered with a thin layer of reddish bark. It was impossible to preserve the bark in sections larger than two by three inches. The earth below the ashes was burnt a bright brick red. The ashes varied from three inches in thickness to a feather edge, but a quarter of an inch thick. The earth covered by them extended over ten by six feet.

“It was near the northwestern edge of the ash bed that we found the end of a large log. Numerous small logs were found above and around this large one, but it did not appear that they were laid with any regularity. They did not seem to be as large as those reported by the men who dug the first hole in the mound. Most of them were six or eight inches in diameter, and six feet in length. They were badly rotted and only a few fragments were saved. Possibly by the use of plaster of Paris sections might have been secured several feet in length, but the ends were so decayed that they would not have shown whether or not they were cut by stone axes. As soon as the end of the log was uncovered the men were set to work upon the ash bed with hand trowels, and they dug over the ground very carefully for more than a day but found nothing of importance. The ashes were very white, and resulted from the burning of large quantities of wood.

“When the end of the log was uncovered it appeared to be fifteen or sixteen inches in diameter, and being accidentally struck by a pick, we were rejoiced to hear it ring as though of sound fresh wood. We were compelled to spend three days more and to cut down the bank between the log and the edge of the mound outside so that the teams could pass in and out. By these two excavations (both were widened) we moved two-thirds of the earth in the mound. Near the log the earth on all sides was very loose, and in the form of clods

and large chunks rather than fine soil. It appeared that a circle of saplings had been placed about the log.

“The log must have been cut at a distance and carried to the mound. There is no cedar within ten miles of the structure at the present day, and none was seen by the early settlers. However, it may be that cedar grew upon this hill in pre-Columbian times. The trench extending to the northwest and uncovering the log was 35 feet in width and something over 100 feet in length.

“On Tuesday, September 4th, the excavation reached the bottom of the log, and measurements gave its length as 18.5 feet with a circumference of 5.4 feet. Immediately below the log was a skeleton. The saplings or small logs constructing the pen had been planted in the earth around this skeleton, somewhat after the form of a tepee. The skeleton itself lay upon the original shale in an excavation two feet below the surface of the ground. It was 20 feet from the slope of the mound directly above or 36 feet below the level of the summit. The skeleton lay with head to the north, arms at the sides, and legs extended. Around each wrist were two copper bracelets. At the neck and upon the chest were several hundred shell beads. There were also the tusks of some large animal. The dry ashes with which the remains were covered, and the great depth from the surface aided in the preservation of such substances as usually decay. Traces of hair were about the skull, the brain,⁶ dried and shrivelled, was found within it, and cloth, buckskin and rude matting and bark covered the remains. All of these were carefully removed and boxed.

“A rough count made on the spot gave the number of beads as 480.

“After removing the skeleton the log was sawed into two sections and carried out and shipped. The outline of the pen was photographed and drawn, and the whole base of the trench down to the original shale carefully dug over. The loose and partly arched earth on either side of the trench was carefully taken out. The possible presence of other pens in the mound was settled in the negative. The sides were undermined at considerable risk and the walls were allowed to fall. Another inspection showed the absence of other burials in the structure.

⁶ This remarkable preservation of the brain is as yet unexplained, though a number of authorities have been consulted. A paper will be devoted to it.—C. B. M.

“Subsequently work of filling up began, and when completed the mound stood about 15 feet in height, flat on top and about 250 feet base.

“The crescent and the small mounds near it were carefully opened but nothing of importance was discovered. Three holes were dug in the crescent, one at each end and one in the center. The crescent averaged three feet in height, was 118 feet across from end to end, 10 feet in width and 250 feet around. There is no evidence of a considerable village site near either of the mounds or the crescent.

WARREN K. MOOREHEAD.”